Introduction

The Pregnancy Risk Assessment Monitoring System (PRAMS) is part of the Centers for Disease Control and Prevention (CDC) initiative to reduce infant mortality and low birthweight. PRAMS is an ongoing, population-based surveillance system that was designed to identify and monitor selected self-reported maternal behaviors and experiences that occur before, during, and after pregnancy among women who deliver live-born infants.

This report is a compilation of data on 22 maternal and child health (MCH) indicators from the PRAMS surveillance system. CDC collaborated with the PRAMS states to choose the indicators included in this report. The criterion for including a state in this report was attainment of questionnaire response rates of approximately 70% or higher. Thirteen states met this criterion: Alabama, Alaska, California, Florida, Georgia, Indiana, Maine, Michigan, New York, Oklahoma, South Carolina, Washington, and West Virginia.

The indicators in the report cover a variety of topics, including unintended pregnancy, prenatal care, Medicaid coverage, participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), breast-feeding, smoking, drinking, stressors, hospital stay for delivery, and infant health. Many of the indicators are included in the *Healthy People 2000* objectives, which include the *Healthy Children 2000* objectives,[1,2] and are reporting requirements for the Title V Maternal and Child Health Block Grant, the major funding source for state MCH programs.

Highlighted in this report are PRAMS data from 1995. Prevalence estimates for each of the 22 indicators are presented by state for 1995 and then for 1993–1995. The report includes results from both multistate and state-specific analyses. For each state, sociodemographic data are presented for the PRAMS-eligible population (women delivering a live infant in their state of residence). Also presented for each state are subgroup analyses by age, race, education, and Medicaid status using 1995 data for five indicators: unintended pregnancy, breast-feeding, smoking during pregnancy, drinking during pregnancy, and physical violence.

This report is the first to capture data from PRAMS states in such a comprehensive manner. It provides state-level prevalences on a number of key MCH indicators. As the first in a series of future PRAMS surveillance reports, this report provides data that can serve as a baseline for select MCH indicators. Thus, researchers can use these data to monitor progress toward national, state, and local pregnancy-related health objectives, including the reduction and prevention of high risk pregnancies and adverse pregnancy outcomes. We view dissemination of the data

included in this report as a key step in the translation of PRAMS data into public health action, a primary goal for PRAMS. We hope that this report will serve as a valuable reference document for use in public health planning and policy development.

References

1. Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—full report, with commentary. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, 1991. DHHS publication no. (PHS)91-50212.

2. See also: Public Health Service. Healthy children 2000: national health promotion and disease prevention objectives selected for mothers, infants, children, adolescents, and youth. Adapted from and included in: Public Health Service. Healthy people 2000: national health promotion and disease prevention objectives—full report, with commentary. Washington, DC: U.S. Department of Health and Human Services, Public Health Service, 1991. DHHS publication no. (PHS)91-50212.

Overview of PRAMS

Background

The Pregnancy Risk Assessment Monitoring System (PRAMS) is a population-based surveillance system of maternal behaviors and experiences before and during a woman's pregnancy and during the early infancy of her child. PRAMS was developed in 1987 in response to several distressing statistics. The U.S. infant mortality rate was no longer declining as rapidly as it had in past years. The prevalence of low-birthweight infants showed little change. At the same time, maternal behaviors such as smoking, drug use, and limited use of prenatal and pediatric care services were recognized as contributors to these slow rates of decline.

Purpose

PRAMS supplements data from vital records for planning and assessing perinatal health programs on a state level. Because PRAMS data are population-based, findings from data analyses can be generalized to an entire state's population of women having live births. PRAMS is designed not only to generate state-specific data but also to allow comparisons among states through the use of standardized data collection methods. Findings from analysis of PRAMS data have been used to enhance states' understanding of maternal behaviors and experiences and their relationship with adverse pregnancy outcomes. Thus, these data can be used to develop and assess programs and policies designed to reduce adverse pregnancy outcomes.

History

PRAMS is administered by the Division of Reproductive Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention. PRAMS operates through a cooperative agreement between CDC and states that have been awarded grants on a competitive basis. In 1987, the first year of PRAMS, five states and the District of Columbia participated. In 1991, eight states were added, and in 1996–1997, six more states joined the PRAMS team. California participated in PRAMS during 1991–1996. Current PRAMS participants include Alabama, Alaska, Arkansas, Colorado, Florida, Georgia, Illinois, Louisiana, Maine, New Mexico, New York, North Carolina, Oklahoma, South Carolina, Washington, and West Virginia. Within state health departments, PRAMS program structures cross several existing organizational units, including maternal and child health and vital statistics. PRAMS surveillance currently covers about 35% of all U.S. births.

Methodology

PRAMS generates statewide estimates of important perinatal health indicators among women delivering a live infant. Each participating state uses a standardized data collection method developed by CDC.[1] PRAMS staff in each state collect data through statewide mailings and follow up with nonrespondents by telephone. Every month, a stratified systematic sample of 100–250 new

mothers is selected from a frame of eligible birth certificates. Each sampled mother is mailed an explanatory letter that introduces the survey, followed by the 14-page questionnaire at two to six months after delivery. A second questionnaire package, and in some states a third, is mailed to those who do not respond. PRAMS staff telephone those mothers who do not respond to the survey.

Five participants (California, the District of Columbia, Georgia, Michigan, and New York) sought to increase survey participation of urban and minority women by sampling these women from hospital delivery logs and interviewing them before they left the hospital. Sampled women were given a self-administered questionnaire within 48 hours of delivery. A second, mailed questionnaire consisting of PRAMS questions concerning early infant development and postpartum experiences was sent to these mothers at two months after delivery. In Georgia, Michigan, and New York, this data collection methodology for urban and minority women was a supplement to the standard mail/telephone methodology used for all other women. California and the District of Columbia adopted hospital surveillance for their entire sample.

The PRAMS questionnaire addresses a myriad of topics, including barriers to and content of prenatal care, obstetric history, maternal use of alcohol and cigarettes, nutrition, economic status, maternal stress, and early infant development and health status. The questionnaire consists of a core component and a state-specific component. The core portion is used by each of the participating PRAMS states. Each state develops its own state-specific portion that addresses its particular data needs. Since its inception, the PRAMS questionnaire has undergone several revisions, referred to as "phases." The current phase, Phase 3, is based on revisions made to the questionnaire in 1995. The indicators included in this document are primarily from the core component of the Phase 2 questionnaire, which is reproduced in Appendix D.

Additional information on PRAMS can be found in the appendixes. Appendix A describes the PRAMS data collection methodology and questionnaire revision. Appendix B contains a table of 1995 sample sizes, response rates, and stratification variables for each state. Appendix C identifies the corresponding PRAMS question number from the PRAMS Phase 2 Core Questionnaire for each indicator in this report, defines each indicator, and specifies which indicators have associated Year 2000 Objectives. Appendix D provides a PRAMS Phase 2 Core Questionnaire.

Technical Notes

This report includes data from Alabama, Alaska, California, Florida, Georgia, Indiana, Maine, Michigan, New York, Oklahoma, South Carolina, Washington, and West Virginia. These states had fully implemented PRAMS data collection procedures and achieved response rates of approximately 70% or higher. The tables that present estimates by state with associated confidence intervals use 1995 data except for Indiana (where data were available for only part of the year and 1994 data were used instead). The multistate tables also present state ranges for 1995 data. The ranges do not include Indiana data; nor do the graphs that accompany the tables.

The multistate tables that present trends by state include data for 1993–1995. Data for 1993 were available for all states except California (where data were available for only the second half of the year) and Washington (where data were available for only part of the year and sample sizes were too small to

produce statewide estimates). Data for 1994 were available for all states included in this report. Data for 1995 were available except as noted previously.

For data collection that included an in-hospital component, response rates for the second, postpartum questionnaire were sometimes considerably lower than for the first, in-hospital questionnaire. Consequently, 1994 estimates do not include postpartum topics for California, where data collection was entirely hospital-based. The postpartum topics include questions about breast-feeding, length of stay in the hospital for delivery, placement of the infant in an intensive care unit, and smoking three months after delivery.

The Phase 3 questionnaire was implemented in late 1995 in Maine, South Carolina, and West Virginia. For most of the indicators in this report, the wording of the questions changed little, if any, between the Phase 2 and Phase 3 versions. For a few questions, the change was substantial enough that we excluded 1995 data for Maine, South Carolina, and West Virginia. (See Appendix A for details.)

Percentages for the demographic variables —maternal age, education, race, marital status, and ethnicity—used in the state-specific tables were obtained from state birth certificate data provided to CDC. (An exception is Oklahoma, for which all demographic variables were estimated from the weighted PRAMS data, since birth files were not available.) Out-of-state residents and out-of-state births were excluded in describing the PRAMS-eligible population. For California, births delivered outside the surveillance area were also excluded.

Except for the tables of state-specific demographic variables, all tables in the report were produced using weighted PRAMS data. Percentages and standard errors were calculated for the characteristic of interest using PROC CROSSTAB in SUDAAN.[2] The 95% confidence intervals (CI) were computed using the formula CI = percentage ± 1.96 × standard error. The number of respondents, reported in each table, is the number of mothers who answered the corresponding PRAMS question. All missing (blank and "don't know") observations are excluded. The percentage of missing values is noted when it equals or exceeds 10%. Because estimates based on small samples are imprecise and may be biased, estimates where the underlying number of respondents was less than 30 are not reported and are noted in the state-specific tables.

In the tables that present data for 1993–1995, for states with only two years of data, the P value to determine statistically significant differences in annual percentages was obtained through the chi-square test within PROC CROSSTAB in SUDAAN. For states with three years of data, the P value indicates a test for linear trend and was calculated using PROC LOGISTIC in SUDAAN.

Note that PRAMS data are representative of women whose pregnancies resulted in a live birth and are not generalizable to all pregnant women. For two reporting areas, data are not representative of the entire state. New York data are for upstate New York only and exclude New York City (which has an autonomous vital records agency). California data are representative of three regions in the northern and central parts of the state. For that reason, data from California are not included in state ranges and the highlights section, nor are they included in the accompanying graphs.

References

1. Centers for Disease Control and Prevention. PRAMS Model Surveillance Protocol, 1996 (unpublished).

2. Shah BV, Barnwell BG, Bieler GS. SUDAAN user's manual: software for analysis of correlated data. Release 6.40. Research Triangle Park, NC: Research Triangle Institute, 1995.

Highlights of PRAMS 1995 Surveillance

- *Unintended pregnancy (includes unwanted and mistimed pregnancies).* New York State (excluding New York City) had the lowest 1995 state prevalence of unintended pregnancy (35%) and South Carolina had the highest prevalence (50%). The prevalence of unintended pregnancy was stable for all PRAMS states from 1993 to 1995, except for three states that had nonsignificant declining trends in unintended pregnancy (Alabama, Alaska, and Georgia).

- *Late entry into prenatal care.* New York State (excluding New York City) had the lowest 1995 state prevalence (17%) and Oklahoma had the highest prevalence (32%) of women entering prenatal care after the first trimester. Georgia, Maine, and West Virginia had a significant decrease in the prevalence of late entry into prenatal care from 1993 to 1995. Florida, Michigan, and South Carolina also had a consistent decrease in this indicator, but the trend was not statistically significant.

- *Medicaid coverage for prenatal care.* State prevalences for 1995 varied greatly, from 27% in New York State (excluding New York City) to 60% in West Virginia. Alabama, Georgia, and South Carolina had prevalences of approximately 50% or higher. West Virginia's prevalence of Medicaid coverage of prenatal care for women who delivered a live infant increased from 54% in 1993 to 60% in 1995. Georgia and Oklahoma also had an increase during this time, but it was not statistically significant.

- *Participation in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) during pregnancy.* New York State (excluding New York City) had the lowest 1995 state prevalence (29%) and West Virginia had the highest prevalence (57%). The prevalence of WIC participation during pregnancy was stable for most PRAMS states from 1993 to 1995, except for Alaska, which had an increase from 32% in 1993 to 42% in 1995.

- *Never initiated breast-feeding.* State prevalences varied greatly for 1995, from 16% in Alaska to 56% in Alabama. South Carolina experienced a statistically significant drop in the prevalence of never initiating breast-feeding from 59% in 1993 to 49% in 1995. Georgia, Maine, and West Virginia also had a decrease in this indicator during 1993–1995, although it was not statistically significant.

- *Breast-fed for less than one week.* State prevalences in 1995 for initiating breast-feeding and stopping within one week varied from 2% in Maine to 7% in West Virginia. Maine experienced a statistically significant drop in the prevalence of breast-feeding less than one week, from 5% in 1993 to 2% in 1995. Alabama and Florida also had a decrease in this indicator during 1993–1995, but it was not statistically significant. Oklahoma, South Carolina, and West Virginia had nonsignificant increases in this indicator.

- *Smoking before, during, and after pregnancy.* South Carolina had the lowest 1995 smoking prevalence for smoking before

pregnancy (23%), Florida had the lowest prevalence for smoking during pregnancy (13%), and Washington state had the lowest prevalence for smoking after pregnancy (19%). West Virginia had the highest 1995 smoking prevalence for before (40%), during (28%), and after pregnancy (36%). Alabama's prevalence of smoking before pregnancy increased from 23% in 1993 to 28% in 1995; its prevalence of smoking after pregnancy increased from 19% in 1993 to 24% in 1995. These increases were statistically significant. Michigan and South Carolina had decreasing trends for all three indicators, but the trends were not statistically significant.

- *Drinking alcohol during the last three months of pregnancy.* West Virginia had the lowest 1995 state prevalence (3%) and Georgia had the highest 1995 state prevalence (9%) of drinking during the last three months of pregnancy. For 1993–1995, Alaska and Oklahoma had decreasing trends in the prevalence of drinking during pregnancy, but these trends were not statistically significant.

- *Separated or divorced during the 12 months before delivery.* The prevalence of women who became separated or divorced from their partners during the 12 months before the baby was born ranged from 11% of women in Maine to 19% of women in Florida.

- *Physically hurt by husband or partner during the 12 months before delivery.* The 1995 prevalence of women reporting being physically hurt by their partners during the 12 months before delivery ranged from 2% in Maine to 6% in Alaska. Georgia experienced a significant drop in reported physical abuse during the 12 months before delivery, from 6% in 1993 to 3% in 1995. Three states had nonsignificant decreasing trends in this indicator (Florida, Maine, and Oklahoma).

- *Women in debt during the 12 months before delivery.* The 1995 state prevalence of women experiencing debt during the 12 months before delivery ranged from 14% in New York state (excluding New York City) to 20% in Oklahoma and Florida. The prevalence of debt among Georgia women decreased from 1993 to 1995, although this decrease was not statistically significant. Michigan experienced an increase in this indicator over the three years, but it was not statistically significant.

- *Hospital stay for one night or less for labor and delivery.* State prevalences for 1995 varied greatly, from 16% in New York state (excluding New York City) to 57% in Washington state. During 1993–1995, all states experienced increases in the percentage of women staying in the hospital for one night or less for labor and delivery.

- *Infant placed in an intensive care unit.* 1995 state prevalences varied from 7% in Alaska to 15% in Alabama. Alabama had a statistically significant increase in the prevalence of infants placed in an intensive care unit, from 11% in 1993 to 15% in 1995.